



2020 CENSUS PROGRAM MEMORANDUM SERIES: 2020.11

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MEMORANDUM FOR: The Record

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Subject: Documentation of Updates to the Content and Forms Design Operation

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This memorandum documents updates that have been made to the Content and Forms Design (CFD) operation since the release of the Content and Forms Design Detailed Operational Plan (DOP) on September 1, 2016. <<https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/planning-docs/CFD-detailed-op-plan.html>>. The only operational changes are to the Business Process Model (BPM) diagrams, and none of the updates are related to the COVID-19 pandemic. These updates clarify portions of the existing model, and do not impact the conduct of the operation. The updates, summarized below, are provided to ensure accurate final documentation is available to the public.

- Figure 2, page 14: A new activity was added to the end of the operational context model to document providing informational materials online.
- Figure 7, page 20: Two new activities were added to activity 50, *Develop Content Specifications for Automated Instruments*. Activity 50.65 documents the submission of instrument specifications for inclusion in Information Collection Request documentation provided to the Office of Management and Budget. Activity 50.67 documents the instrument pretesting that occurs after initial development.
- Figure 9, page 22: A new decision step and activity were added to activity 30, *Design and Develop Paper Questionnaires*, to document testing of paper questionnaires.
- Figure 11, page 24: The final activity within activity 40, *Finalize Paper Questionnaire Print File*, was split into three component activities: Notify iCADE (Integrated Computer Assisted Data

Entry) Print File Testing Can Begin (40.27), Perform Print File Quality Review (40.30), and Send Print File to Printing and Distribution (40.35).

- Figure 14, page 27: The final activity within activity 45, *Finalize Nonquestionnaire Paper Materials Print File*, was split into two component activities: Perform Print File Quality Review (45.30), and Send Print File to Printing and Distribution and DLM (45.35). Activity 40.27 was removed.

The updated BPMs are posted to [census.gov](https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/memo-series.html) and linked to the 2020 Census Memo Series at <<https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/memo-series.html>>.

The 2020 Census Memorandum Series

The 2020 Census Memorandum Series documents significant decisions, actions, and accomplishments of the 2020 Census Program for the purpose of informing stakeholders, coordinating interdivisional efforts, and documenting important historical changes.

A memorandum generally will be added to this series for any decision or documentation that meets the following criteria:

1. A major program-level decision that will affect the overall design or have significant effect on 2020 Census operations or systems.
2. A major policy decision or change that will affect the overall design or significantly impact 2020 Census operations or systems.
3. A report that documents the research and testing for 2020 Census operations or systems.

Visit [2020 Census](https://www.census.gov) on [Census.gov](https://www.census.gov) to access the Memorandum Series, the 2020 Census Operational Plan, and other information about preparations for the 2020 Census.

2020 Census Detailed Operational Plan for: 4. Content and Forms Design Operation (CFD)

A New Design for the 21st Century

Issued: September 1, 2016

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Prepared by: Decennial Census Management Division



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Approvals

This Content and Forms Design Detailed Operational Plan has been reviewed and approved for use.

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Document Change History

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1	v0.01	04/05/16	Initial Working DRAFT Version from 2020 Census DOP template. Uses Annotated version of CFD BPM Version 4.1
2	v0.02	04/15/16	Updated Working DRAFT Version incorporating feedback from CFD staff. Uses Annotated version of CFD BPM Version 4.1
3	v0.03	04/20/16	Updated Working DRAFT Version incorporating branch input. Uses Annotated version of CFD BPM Version 4.1
4	v0.04	05/03/16	Updated Working DRAFT Version incorporating branch input.
5	v0.05	05/06/16	Updated Working DRAFT incorporating updated figures.
6	v0.06	05/10/16	Working DRAFT Version for acting ADC review.
7	V0.07	05/31/16	Working DRAFT Version after acting ADC review.
8	V0.08	06/16/16	Working DRAFT for DPMO review, final IPT input
9	V0.09	06/22/16	Working DRAFT for Division Chief review, incorporating DPMO input
10	V0.10	6/30/16	Division Chief approved
11	V0.11	08/25/16	Updated Working DRAFT incorporating Associate/Assistant Directors' input
12	V1.0	09/01/16	Final Draft

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Table of Contents

1. Document Purpose.....	1
2. Operational Overview	2
2.1 Operation Purpose	2
2.2 Background	2
2.2.1 High-Level Operational Design	4
2.2.2 CFD Operational Context	5
2.2.2.1 CFD Operational Inputs	7
2.2.2.2 CFD Operational Controls	8
2.2.2.3 CFD Operational Outputs.....	9
2.2.2.4 CFD Operational Mechanisms	10
2.3 CFD Design Assumptions.....	13
3. Content and Forms Design (CFD) Detailed Process Description	14
3.1 Form Content Determination [CFD 4-1].....	15
3.1.1 Initiate Form Development [CFD 4-1.1]	16
3.1.2 Determine Form Content [CFD 4-1.2].....	17
3.2 Content Specifications Development for Automated Instruments [CFD 4-2]	18
3.2.1 Develop Content Specifications for Automated Instruments [CFD 4-2.1].....	19
3.3 Paper Questionnaire Design and Development [CFD 4-3]	21
3.3.1 Design and Develop Paper Questionnaires [CFD 4-3.1]	22
3.3.2 Finalize Paper Questionnaire Print File [CFD 4-3.2]	23
3.4 Nonquestionnaire Paper Materials Design and Development [CFD 4-4].....	24
3.4.1 Design and Develop Nonquestionnaire Paper Materials [CFD 4-4.1]	25
3.4.2 Finalize Nonquestionnaire Paper Materials Print File [CFD 4-4.2]	27

4. Cost Factors.....	28
5. Measures of Success	29
Appendix A – Acronyms and Terminology	30
Appendix B – References.....	34
Appendix C – Activity Tree for Content and Forms Design Operation (CFD)	
35	
Appendix D – Business Process Models.....	36

List of Figures

Figure 1: Content and Forms Design Operation (CFD) Context Diagram	6
Figure 2: CFD Operation Context Model	14
Figure 3: Form Content Determination [CFD 4-1] Constituent Activities.....	15
Figure 4: Initiate Form Development	16
Figure 5: Determine Form Content.....	17
Figure 6: Content Specifications Development for Automated Instruments [CFD 4-2] Constituent Activities	19
Figure 7: Develop Content Specifications for Automated Instruments.....	20
Figure 8: Paper Questionnaire Design and Development [CFD 4-3] Constituent Activities	21
Figure 9: Design and Develop Paper Questionnaires	22
Figure 10: Modify Form	22
Figure 11 : Finalize Paper Questionnaire Print File.....	24
Figure 12: Nonquestionnaire Paper Materials Design and Development [CFD 4-4] Constituent Activities	25
Figure 13: Design and Develop Nonquestionnaire Paper Materials.....	26
Figure 14 : Finalize Nonquestionnaire Paper Materials Print File	27

List of Tables

Table 1: CFD Operational Inputs.....	7
Table 2: CFD Operational Controls.....	8
Table 3: CFD Operational Outputs	9
Table 4: Staff Resources used within CFD Operational Activities	11
Table 5: Infrastructure Sites for CFD Operational Activities	11
Table 6: Systems used within CFD Operational Activities	12
Table 7: Acronyms and Abbreviations List	30
Table 8: Glossary of Terms.....	33

1. Document Purpose

The 2020 Census Detailed Operational Plan for the Content and Forms Design Operation (CFD) is intended for use by U.S. Census Bureau managers, staff, contractors, and other internal and external stakeholders working on the 2020 Census. The document presents the detailed operational design for CFD and includes a summary of the operational processes involved, their inputs, outputs and controls, and the basic mechanisms employed to conduct the operational work.

Anticipated uses of this document include the following:

- Communication – Documents operational design details for internal and external stakeholders
- Planning – Documents planning assumptions and key milestones
- Staffing – Documents staffing needs and strategies
- Design – Describes operations and flows, which inform design of IT systems, manual processes, and training
- Development – Identifies business rules and required capabilities to be developed.
- Testing – Provides a basis for developing integrated test plans for IT systems and processes.

This document complements the 2020 Census Operational Plan, which presents the initial baseline version of the 2020 Census operational design and covers all operations required to execute the 2020 Census, starting with precensus address and geographic feature updates and ending once census data products are disseminated and coverage and quality are measured.

This document will be updated over time to reflect changes in strategies that result from 2020 Census planning, research, and testing activities.

2. Operational Overview

2.1 Operation Purpose

The Content and Forms Design Operation (CFD) performs the following activities:

- Identify and finalize content and design of questionnaires and associated nonquestionnaire materials such as letters, postcards, informational inserts, envelopes, and field enumeration materials.
- Ensure consistency across data collection modes and operations, including but not limited to: questionnaire content (including help text), mailing materials, and field materials.
- Provide the optimal design and content of the questionnaires to encourage high response rates.

2.2 Background

CFD is responsible for identifying and finalizing the content and design of questionnaires and associated nonquestionnaire materials. To support the 2020 Census, CFD will ensure content consistency across data collection modes and operations, as question wording varies depending on the mode of data collection. Content will be written so that all instruments collect equivalent information from respondents, regardless of data collection mode.

CFD will use results from middecade testing and pretesting, as well as information from previous censuses and external requests, to determine the subjects and questionnaire content for the 2020 Census. CFD will provide the subjects for inclusion in the submission of the *Subjects Planned for the 2020 Census Program*, delivered to Congress by March 31, 2017, and questionnaire content for inclusion in the *Questions Planned for the 2020 Census Program*, delivered to Congress by March 31, 2018.

There are several key changes to CFD being planned for the 2020 Census. In previous censuses, data collection was conducted using paper questionnaires for Self-Response, Nonresponse Followup (NRFU), and Group Quarters (GQ) operations. In 2020, CFD will expand into providing content for automated data collection instruments, while continuing to support paper data collection operations.

One of the key innovation areas of the 2020 Census is Optimizing Self-Response. CFD will support this key innovation by providing questionnaire content that ensures consistency across modes and encourages high response and completion rates. CFD will provide content specifications for the Internet and the Census Questionnaire Assistance (CQA) instruments, in addition to providing content and layout of paper questionnaires. Content specifications include any wording displayed to a respondent, such as: question wording and fills (for questions with automatic predetermined wording), response categories and fills (for response categories with automatic predetermined wording), help texts, error messages, skip patterns pertaining to content, field labels (e.g. “street name”), instrument

labels for navigation (e.g. "Next," "Previous," etc.), and any wording found on the instrument dashboard (e.g. welcome message, labels for navigation, etc.).

CFD will develop the 2020 Census mailing materials that include letters, postcards, informational inserts, and envelopes. CFD will design the materials to optimize the space available on the different materials, noting the space constraints and the purpose of each item. CFD will inform Integrated Partnership and Communications (IPC), Internet Self-Response (ISR), and subject matter experts (SME) throughout the development of the materials and solicit feedback to ensure consistent messaging.

Another key innovation area for the 2020 Census is Reengineered Field Operations. CFD will support this key innovation by providing the content specifications for the automated field enumeration instrument and developing field enumeration materials. The content specifications will include any wording read to a respondent, such as: question wording and fills (for questions with automatic predetermined wording), response categories and fills, help texts, error messages, and skip patterns pertaining to content. CFD will ensure content is optimized and consistent with other modes, encourages high response and completion rates, and contributes to a more efficient NRFU operation. CFD will also develop field enumeration materials, such as the Notice of Visit, Confidentiality Notice, and Information Sheet.

In addition to NRFU operations, CFD will support the Address Canvassing, Update Enumerate (UE), GQ, Enumeration at Transitory Locations (ETL), and Island Areas operations during the 2020 Census. CFD will provide content specifications and associated nonquestionnaire materials for data collection as needed by the operations. CFD will ensure content consistency across modes for the operations.

CFD will maintain a master list of the questionnaires and associated nonquestionnaire materials and manage the review process, ensuring all items undergo multiple rounds of table reviews before submitting to the Decennial Content Council and other appropriate governance boards for approval. The total number of questionnaires and forms will depend on requirements provided by each program area (e.g., ETL, ISR, GQ, NRFU, UE, etc.).

With respect to paper materials, CFD will be responsible for the entire development process that includes design, review, and final sign-off of the materials. CFD will send all paper materials requiring the director's signature to the Correspondence Quality Assurance Staff (CQAS) for approval. For automated instruments, CFD will provide the content specifications to teams responsible for the development of the instruments and review the content as part of the SME instrument testing phase of instrument development.

2.3 Design Overview

The sections below present the high-level design for CFD. Refer to the 2020 Census Operational Plan for a complete inventory of design decisions for all 2020 Census operations.

2.3.1 High-Level Operational Design

The design of CFD for the 2020 Census includes four major operational activity areas:

- Form Content Determination
- Content Specifications Development for Automated Instruments
- Paper Questionnaire Design and Development
- Nonquestionnaire Paper Materials Design and Development

Each of these major activity areas is summarized below. Together, these activities represent the complete set of work that needs to be performed to conduct this operation.

Form Content Determination

CFD will finalize the content of questionnaires and associated nonquestionnaire materials for the 2020 Census. Results from the 2014 Census Test, 2015 Census Test, 2015 National Content Test, 2016 Census Test, 2017 Census Test, and 2017 Puerto Rico Census Test will help inform final content decisions for the 2020 Census. In addition to the field tests, CFD will consult findings from additional qualitative research to help optimize content.

Content Specifications Development for Automated Instruments

CFD will develop the 2020 Census content specifications for automated instruments in support of the ISR, CQA, and field enumeration activities. CFD will manage the content of these specifications to ensure consistency across operations and with other data collection modes.

Paper Questionnaire Design and Development

CFD will design and develop paper questionnaires for the 2020 Census and maintain consistency across operations and with other data collection modes. CFD will work with SMEs to design paper questionnaires that will use in-house systems for data capture.

Nonquestionnaire Paper Materials Design and Development

CFD will design and develop nonquestionnaire materials to support data collection operations. Nonquestionnaire materials for self-response operations include letters, postcards, informational inserts, and envelopes. Nonquestionnaire materials for field operations include the Notice of Visit, Confidentiality Notice, and Information Sheet.

The full hierarchy of activities for CFD is provided in Appendix C in the form of an Activity Tree. In the Activity Tree, each major operational activity area listed above is numbered and then broken down into a numbered set of subactivities, some of which are further broken down into more detailed numbered sub-activities or steps.

For a full description of the operational subactivities that comprise CFD, see the Detailed Process Description discussions in Section 3 below.

2.3.2 CFD Operational Context

CFD activities described above are conducted within the context of other 2020 Census operations, programs, or data sources that are external to the 2020 Census Program. One way to depict an operational context is by using a “Context Diagram,” which shows the boundary of the operational process, the operational activities it contains, and the information exchanged with its neighbor operations (or other entities), as well as the resources (mechanisms) needed to conduct the operational work.

Figure 1 is a top-level context diagram for CFD represented as an Integrated Definition, Level 0 (IDEF0) Model. An IDEF0 Model of a process (or operation) shows the Inputs, Controls, Outputs, and Mechanisms of the process. These IDEF0 model elements are summarized below and described further in the sections that follow.

The yellow box in the center of the IDEF0 model lists the major operational activity areas for the operation, numbered as given in the CFD Activity Tree in Appendix C. Specific Information Exchanges (IE) are shown in different colored boxes to represent the Inputs (green boxes on left side), Outputs (orange boxes on right side), Controls (purple boxes on top), and Mechanisms (blue boxes on the bottom). Boxes to the left of the Inputs indicate the *Provider* of the inputs to the operation (typically another 2020 Census operation or an external source). The Provider of the Controls is noted in the box itself. Boxes to the right of the Outputs indicate the *Receiver* of the outputs (typically another 2020 Census operation or external entity). Each Information Exchange has a name and a unique number for identification purposes.

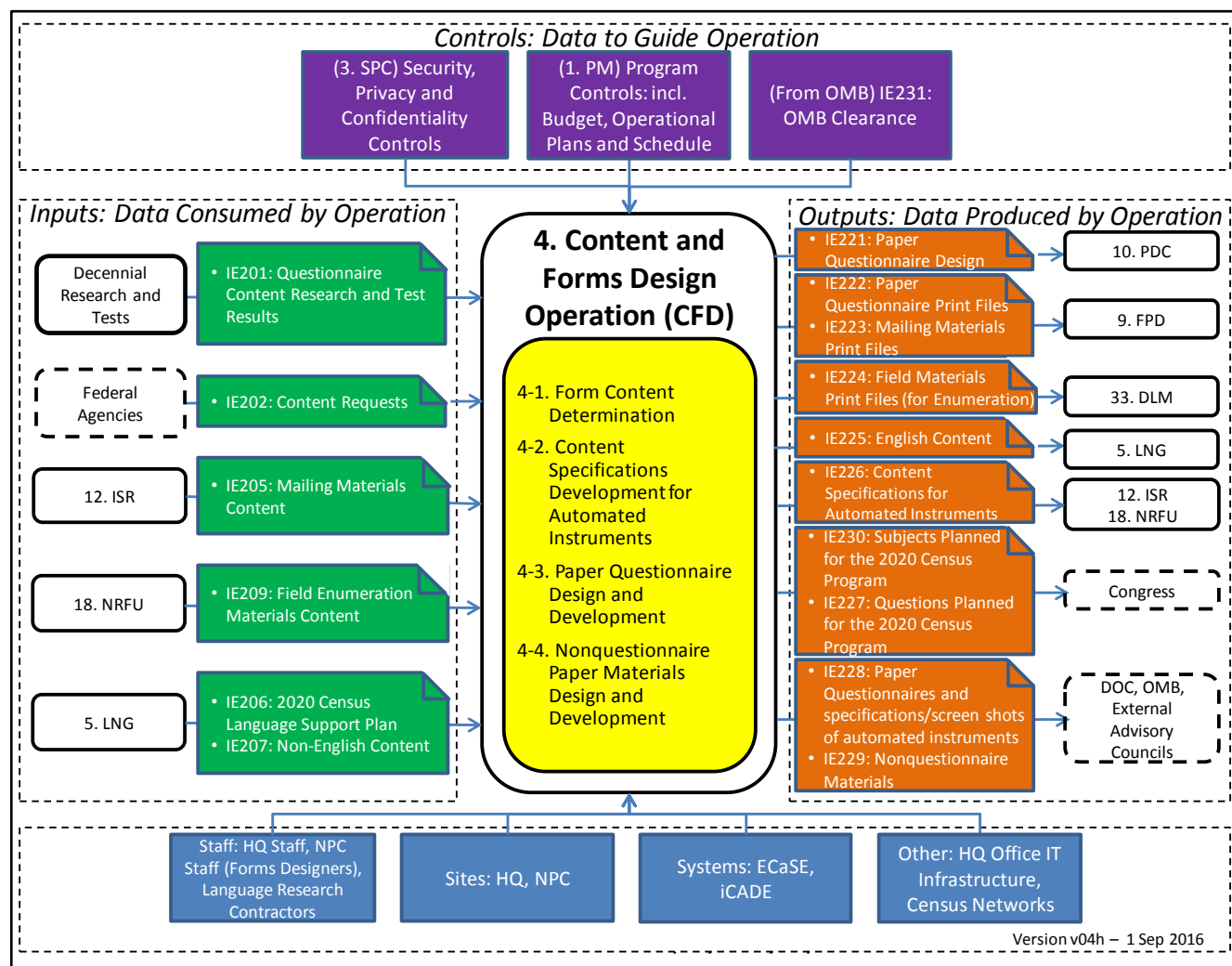


Figure 1: Content and Forms Design Operation (CFD) Context Diagram

For CFD, the input data come from both internal and external sources. External input comes from the federal agencies. Prior to each decennial census, the Census Bureau requests and receives feedback from federal agencies regarding updates to existing federal uses, descriptions of new uses, and requests for new questionnaire content to support statutory data uses.¹ Internal input is provided by other decennial census operations, including ISR, NRFU, LNG, Paper Data Capture, GQ, UE, SMEs, and from the results of Decennial Research and Tests.

¹ A more detailed description of this process is included in 2020 Census Decision Memorandum 2016.05, available at <http://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/memo-series.html>.

The control data that are used to guide CFD activities include Program Controls, Security Controls, and the Office of Management and Budget.

The output data produced by CFD includes automated instrument specifications for both the Internet and the field enumeration instruments, as well as a paper questionnaire design and print files. These outputs help ensure consistency across data collection modes and operations, and provide the optimal design and content to encourage high response rates. Other outputs include print files for field materials and other nonquestionnaire materials, English content provided to LNG, and question topics and wording submitted to Congress.

The mechanisms (i.e. physical resources) employed by CFD include Staff (at HQ, at NPC, and language research contractors), infrastructure sites (HQ, NPC), Systems, office IT infrastructure, and Census Bureau Networks.

2.3.2.1 CFD Operational Inputs

Inputs are the data that are consumed by the operation. The inputs define the amount of operational work that needs to be performed.

Table 1 lists the inputs to CFD.

Table 1: CFD Operational Inputs

Provider	Information Exchange	Description
Decennial Research and Tests	IE201: Questionnaire Content Research and Test Results	Results of research conducted by the 2020 Research Program on the content of 2020 Census Questionnaire
Federal Agencies	IE202: Content Requests	Requests from federal agencies regarding the topics for the 2020 Census and input from inter-agency working groups
12. Internet Self-Response Operation (ISR)	IE205: Mailing Materials Content	Content for the nonquestionnaire paper materials supporting self-response (includes GQ requirements)
18. Nonresponse Followup Operation (NRFU)	IE209: Field Enumeration Materials Content	Content for the nonquestionnaire materials supporting field enumeration (includes Update Enumerate, GQ, ETL requirements)

Provider	Information Exchange	Description
5. Language Services Operation (LNG)	IE207: Non-English Content	Non-English content for paper questionnaires, nonquestionnaire materials, and content specifications for automated instruments, as specified in the 2020 Census Language Support Plan.
	IE206: 2020 Census Language Support Plan	Document that specifies the number of languages and level of support for each language to be included in the 2020 Census. To be issued by late 2017 (calendar year).

2.3.2.2 CFD Operational Controls

Controls are the data that guide the behavior of the operation. They are not consumed by the operation, but rather they provide guidance, models, limits, criteria, cutoff dates, or other information that controls the way in which the operational work is performed.

Table 2 lists the controls for CFD.

Table 2: CFD Operational Controls

Provider	Information Exchange	Description
1. Program Management Operation (PM)	Program Controls	Program Control information including: <ul style="list-style-type: none"> Budget Operational plans and schedule
3. Security, Privacy, and Confidentiality Operation (SPC)	Security, Privacy, and Confidentiality Controls	Laws, policies, regulations, and guidelines related to physical security, IT security, data security, and privacy and confidentiality impacts, analyses, and processes. These include but are not limited to Title 13, Title 26, and other laws and policies related to protection of personally-identifiable information.
OMB	IE231: OMB Clearance	Approval of questionnaires and nonquestionnaire paper materials from OMB

2.3.2.3 CFD Operational Outputs

Outputs are the data produced by the operation. The outputs constitute the results of operational work that has been performed. Outputs produced may be used as inputs or controls to other operations.

Table 3 lists the outputs from CFD.

Table 3: CFD Operational Outputs

Consumer	Information Exchange	Description
10. Paper Data Capture Operation (PDC)	IE221: Paper Questionnaire Design	Design of the paper questionnaires
9. Forms Printing and Distribution Operation (FPD)	IE222: Paper Questionnaire Print Files	Print files for the paper questionnaires
	IE223: Mailing Materials Print Files	Print files for the nonquestionnaire paper mailing materials supporting enumeration activities
33. Decennial Logistics Management Operation (DLM)	IE224: Field Materials Print Files (for Enumeration)	Print files for the field materials that will be used to supporting enumeration activities
5. Language Services Operation (LNG)	IE225: English Content	English content for questionnaires and associated nonquestionnaire materials that require translation, as specified in the 2020 Census Language Support Plan
12. Internet Self-Response Operation (ISR) 18. Nonresponse Followup Operation (NRFU)	IE226: Content Specifications for Automated Instruments	Content (English and non-English) for automated instruments and additional content-related guidance, such as response option wording, skip patterns, and help text (includes GQ requirements)

Consumer	Information Exchange	Description
Congress	IE230: Subjects Planned for the 2020 Census Program	Deliverable submitted to Congress that provides the subjects to appear on the 2020 Census questionnaire
	IE227: Questions Planned for the 2020 Census Program	Deliverable submitted to Congress that provides the questions to appear on the 2020 Census questionnaire.
DOC, OMB, External Advisory Councils	IE228: Paper Questionnaires and Content Specifications/Screen Shots of Automated Instruments	Questionnaire materials to be reviewed by external entities
	IE229: Nonquestionnaire Materials	Nonquestionnaire paper materials to be reviewed by external entities

2.3.2.4 CFD Operational Mechanisms

Mechanisms are the resources (persons, places, and things) that are used to perform the operational processes. They include staff resources, infrastructure sites, systems, and other technology infrastructure.

Staff Resources

Table 4 identifies the staff resources employed for CFD.

Table 4: Staff Resources used within CFD Operational Activities

Staff Resources	Description/Role
HQ Staff	HQ Staff includes: <ul style="list-style-type: none">• HQ staff to manage CFD and coordinate activities with NPC and ACSD form designers and language research contractors• Printing staff, stakeholders, SMEs
NPC Staff	Forms designers who ensure that the format and design of the paper questionnaires can work effectively with the scanning equipment
Language Research Contractors	Contractors to conduct pretesting of non-English materials

Infrastructure Sites

Table 5 identifies the infrastructure sites employed for CFD.

Table 5: Infrastructure Sites for CFD Operational Activities

Infrastructure Site	Description/Role
HQ	Headquarters of the Census Bureau in Suitland, MD where most of the CFD operational activities take place
NPC	National Processing Center in Jeffersonville, IN where designers create the form layouts and material templates for printing

Systems and other Technology Infrastructure

Table 6 identifies the systems employed for CFD.

Table 6: Systems used within CFD Operational Activities

System	Description
Enterprise Censuses and Surveys Enabling Platform (ECaSE)	<p>Enterprise solution that provides the following functionality:</p> <ul style="list-style-type: none"> • Supports field data collection for address listing/mapping and enumeration work. • Creates and manages the universe for all enumeration operations. • Maintains operational workloads as data collection proceeds. • Supports work assignment and schedule management for field data collection operations for in-office and mobile users. • Supports self-response data collection via the Internet for survey and census respondents and for call center agents on behalf of respondents. • Supports questionnaire design (for automated instruments) and metadata maintenance. <p>For CFD, ECaSE supports questionnaire design (for automated instruments) and metadata maintenance.</p>
iCADE	<p>iCADE is an integrated computer-assisted data entry system. It uses optical character recognition technology to electronically capture paper-based survey responses. CFD designs paper questionnaires such that iCADE can be used to capture hand-written responses.</p>

Other technology infrastructure employed for CFD includes:

- HQ office IT infrastructure to conduct CFD operational work
- Census Bureau Network connectivity to transmit data between operational systems and operational sites

2.4 CFD Design Assumptions

Assumptions upon which the Content and Forms design operational plan is based are listed below.

- There will be an Internet self-response data collection instrument (includes GQ).
- There will be an automated field enumeration data collection instrument (includes GQ).
- There will be an automated Census Questionnaire Assistance data collection instrument.
- There will be a paper questionnaire.
- The bilingual paper questionnaires will use the flip-style format.
- A content repository will be available to develop a central, electronic repository of 2020 Census content (for automated instruments).

3. Content and Forms Design (CFD) Detailed Process Description

Figure 2 is a top-level Business Process Model (BPM) showing the Level 1 activity areas within CFD. BPMs for the 2020 Census follow industry-standard Business Process Model and Notation (BPMN). Refer to Appendix D for an explanation of how to read the BPMN notations and a copy of all of the BPMN diagrams for this operation.

This top-level BPM serves as the Context Model for CFD. A BPMN Context Model displays the high-level activities within the operation and relationships between them, whereas the IDEF0 Context Diagram shown earlier depicts the boundaries of the operation or activity and the interfaces between the operation or activity and other operations and activities with which it is associated.

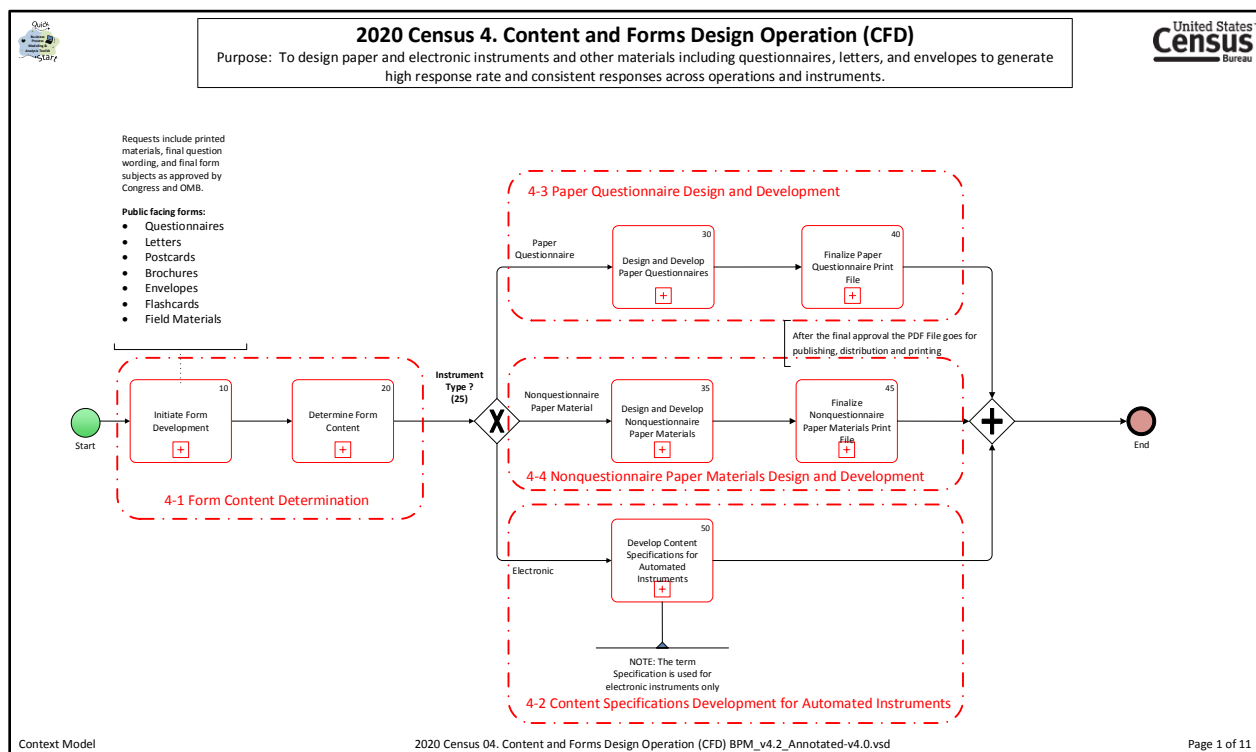


Figure 2: CFD Operation Context Model

CFD is subdivided into the following activity areas.

- Form Content Determination [CFD 4-1]
- Content Specifications Development for Automated Instruments [CFD 4-2]
- Paper Questionnaire Design and Development [CFD 4-3]

- Nonquestionnaire Paper Materials Design and Development [CFD 4-4]

The business processes for each of these Level 1 activity areas are discussed along with their inputs and outputs in the following subsections.

3.1 Form Content Determination [CFD 4-1]

Figure 3 shows the BPM for the Form Content Determination [CFD 4-1] activity area (area within the shaded gray rounded rectangle) and its constituent activities within the overall context of CFD.

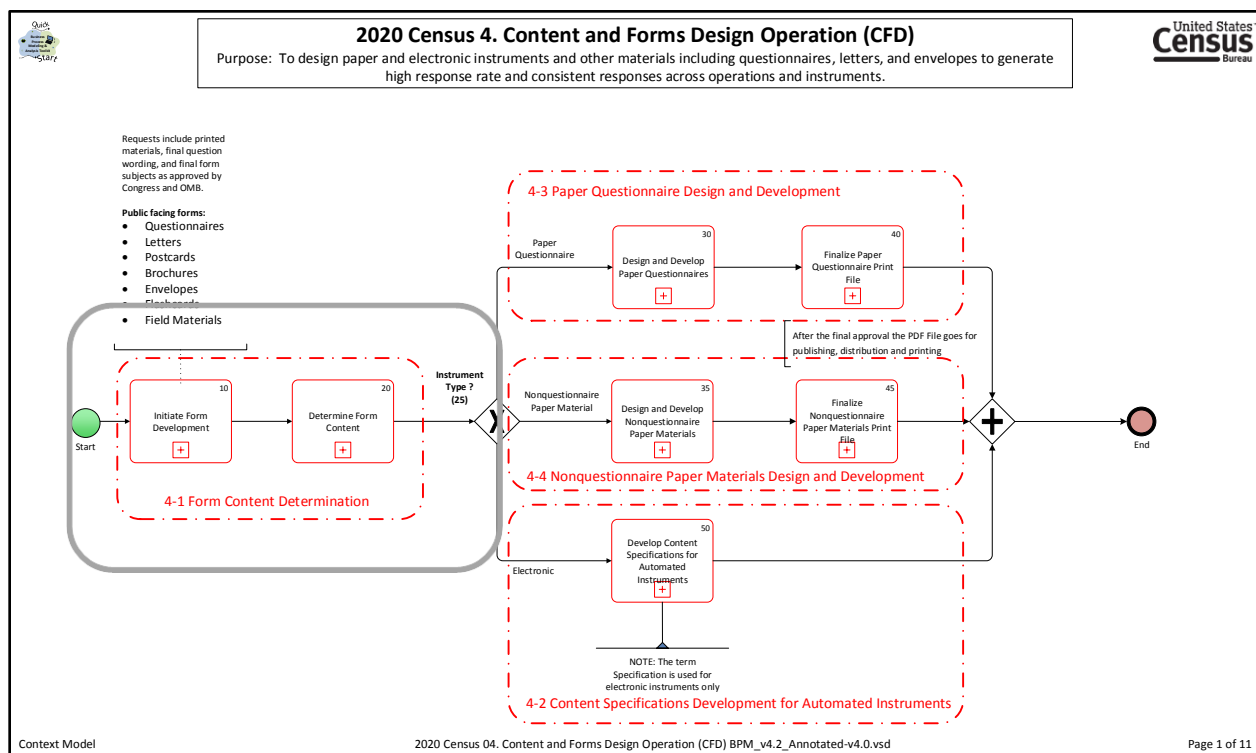


Figure 3: Form Content Determination [CFD 4-1] Constituent Activities

The Form Content Determination activity area is subdivided into the following operational sub-activities.

- Form Content Determination [CFD 4-1]
 - Initiate Form Development [CFD 4-1.1]
 - Determine Form Content [CFD 4-1.2]

Form Content is determined by first initiating form development and then determining form content.

Subsequent sections describe the Form Content Determination operational subactivities in detail.

3.1.1 Initiate Form Development [CFD 4-1.1]

A detailed view of the constituent activities that make up the “Initiate Form Development” operational subactivity is given in Figure 4 below.

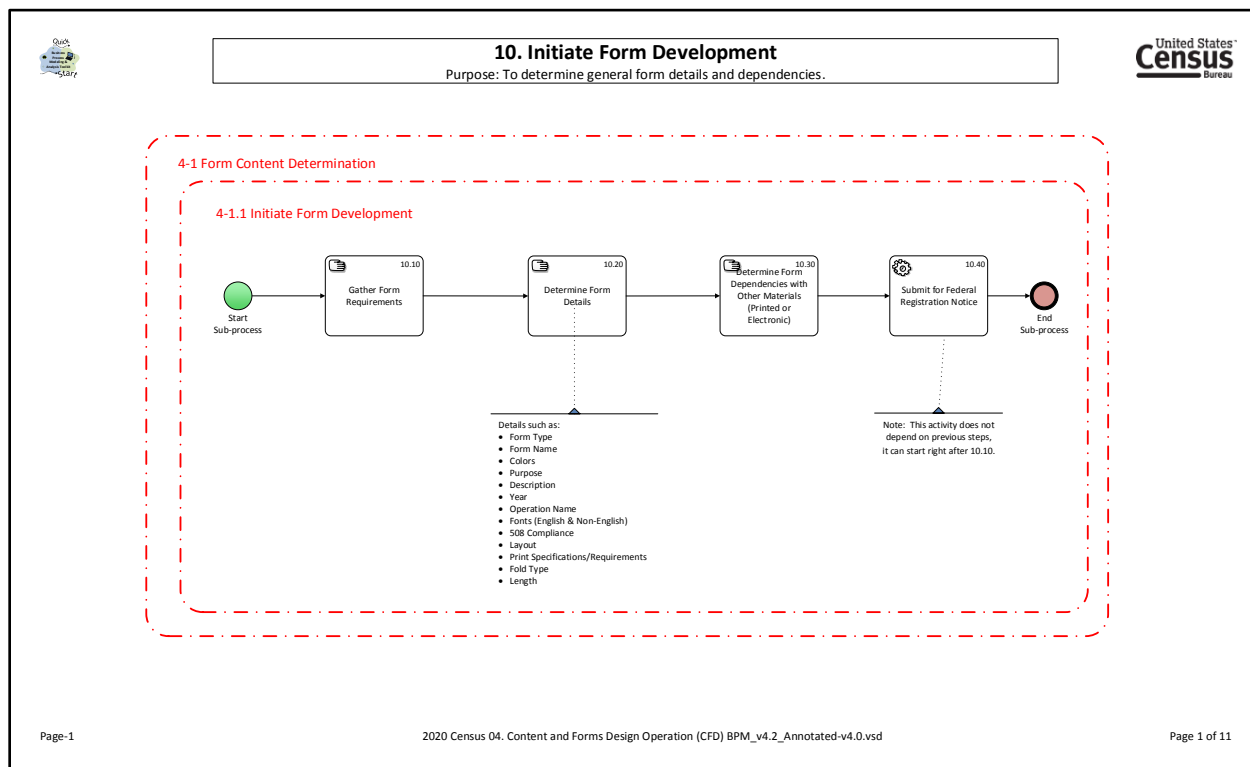


Figure 4: Initiate Form Development

The first step in initiating form development is to gather requirements from stakeholders. This includes receiving information from external stakeholders about the federal requirements and uses of Census Bureau data. Before each decennial census, the Census Bureau requests and receives feedback from federal agencies regarding updates to existing federal uses, descriptions of new uses, and requests for new questionnaire content to support statutory data uses. The Census Bureau reviews these documented uses against the data collections approved by the OMB, results of cognitive and field research, and content collected through other federal surveys, to determine the subjects and questions to be proposed.

SMEs also contribute as internal stakeholders in providing input on question wording, skip patterns, and the portfolio of questionnaires and forms needed for the 2020 Census. This group includes representatives from the Administrative and Customer Services Division (ACSD), Associate Directorate for Economic Programs (ADEP), Center for Survey Measurement (CSM),

Decennial Census Communications Office (DCCO), Decennial Census Management Division (DCMD), Decennial Statistical Studies Division (DSSD), Field Division (FLD), Geography Division (GEO), National Processing Center (NPC), Population Division (POP), and Social, Economics, and Housing Statistics Division (SEHSD).

Once questionnaire and forms requirements are gathered, details are determined with input from the internal stakeholders. Details include the form type and name, colors, purpose and description of the form, year, the operation for which the form is needed, fonts that are required (English and non-English), information on layout and 508 compliance, print specifications, and the type of folding, if needed. Once the details are established, CFD determines form dependencies with other materials.

3.1.2 Determine Form Content [CFD 4-1.2]

A detailed view of the constituent activities that make up the “Determine Form Content” operational subactivity is given in Figure 5 below.

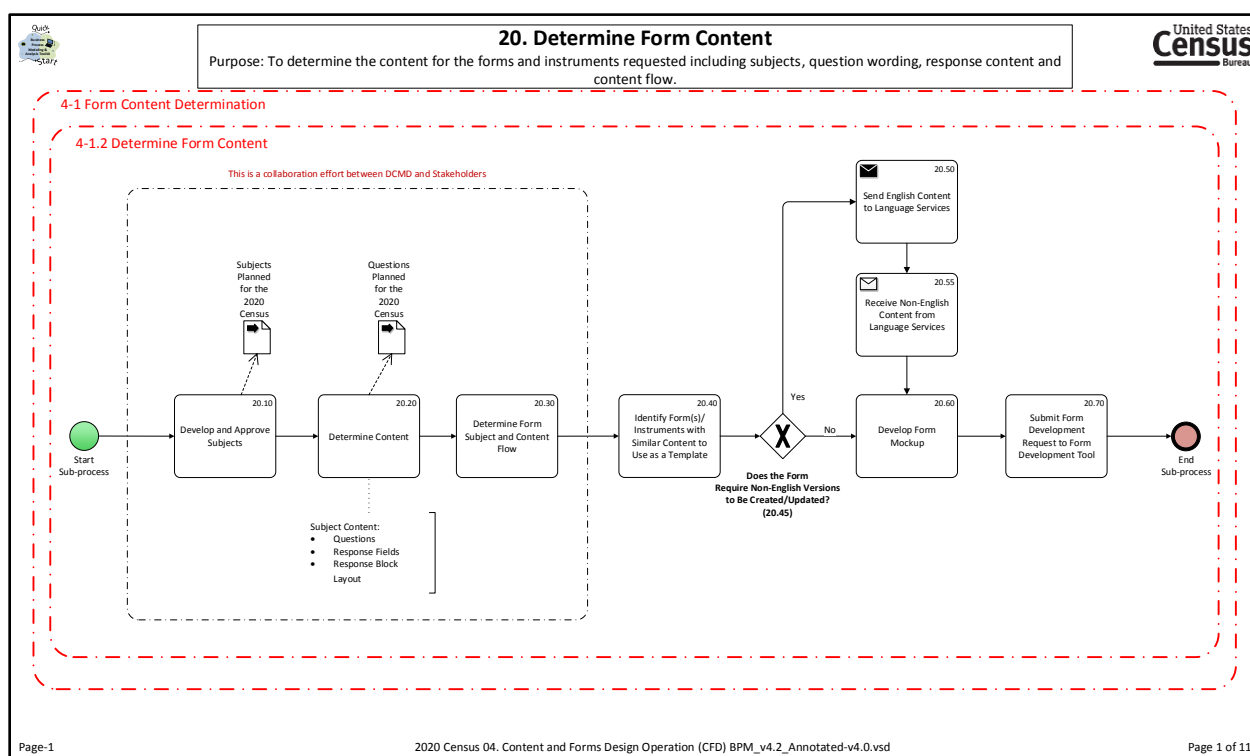


Figure 5: Determine Form Content

CFD first develops and approves descriptions of the subjects with input from stakeholders, including CSM, DCCO, DCMD, DSSD, FLD, GEO, POP, and SEHSD. Subjects reflect questions and question sets designed to produce data about a concept (for example, the age

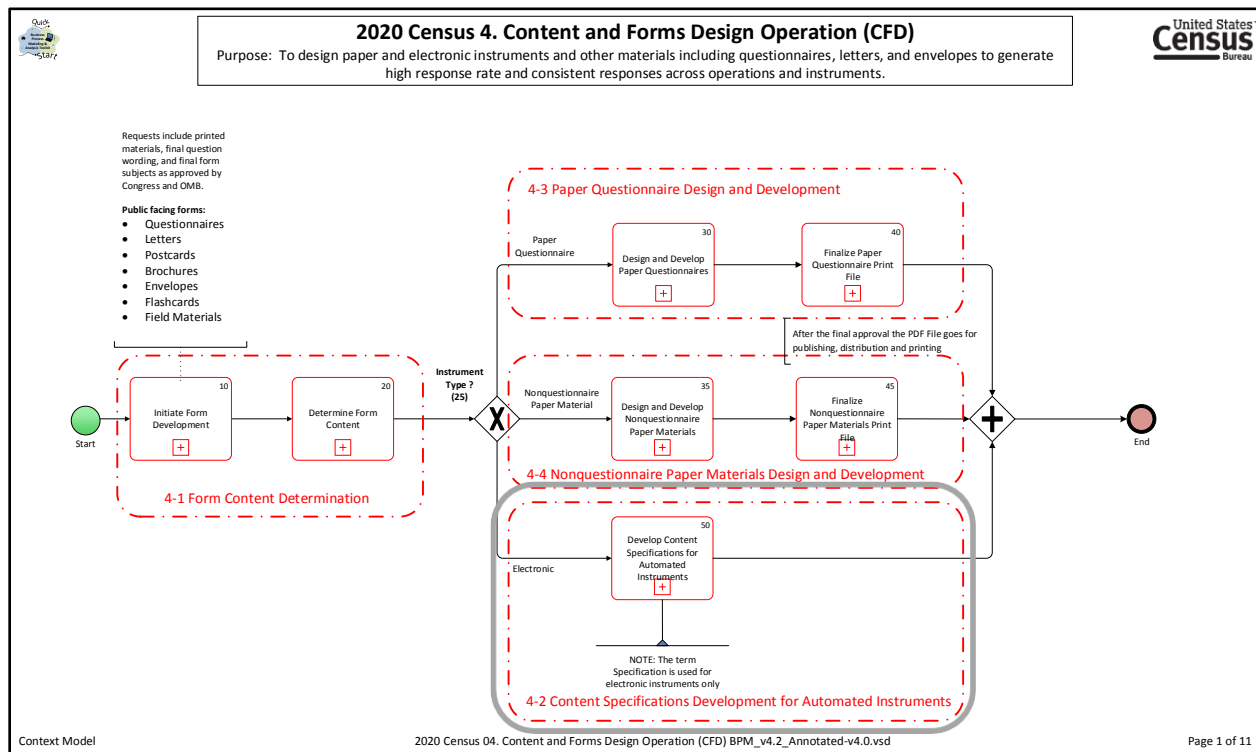
subject contains both the age and the date of birth questions that are used together to produce data about age). Once subjects are determined, CFD determines the content, including question wording, response fields, and response block layout. CFD also determines the flow of the subjects and content, with input from stakeholders.

Once the subjects, content, and flow are determined, CFD identifies the forms with similar content to use as templates for the 2020 Census forms. These can be forms that were used in previous tests or censuses, or from other Census Bureau programs. CFD also works with LNG to determine if the forms require non-English versions to be created or updated. If non-English versions are required, CFD sends English content to LNG, and LNG delivers non-English content after translation conducted by the Decennial Translation Office (DTO).

Next, CFD develops the mockups and works with ACSD, ADEP, DCCO, DCMD, and NPC when submitting form development requests.

3.2 Content Specifications Development for Automated Instruments [CFD 4-2]

Figure 6 shows the BPM for the Content Specifications Development for Automated Instruments [CFD 4-2] activity area (area within the shaded gray rounded rectangle) within the overall context of the CFD Operation.



**Figure 6: Content Specifications Development for Automated Instruments [CFD 4-2]
Constituent Activities**

The Content Specifications Development for Automated Instruments activity area has only one sub-activity, as shown below.

- Content Specifications Development for Automated Instruments [CFD 4-2]
 - Develop Content Specifications for Automated Instruments [CFD 4-2.1]

The subsequent section describes the Content Specifications Development for Automated Instruments operational subactivity in detail.

3.2.1 Develop Content Specifications for Automated Instruments [CFD 4-2.1]

A detailed view of the constituent activities that make up the “Develop Content Specifications for Automated Instruments” operational sub-activity is given in Figure 7 below.

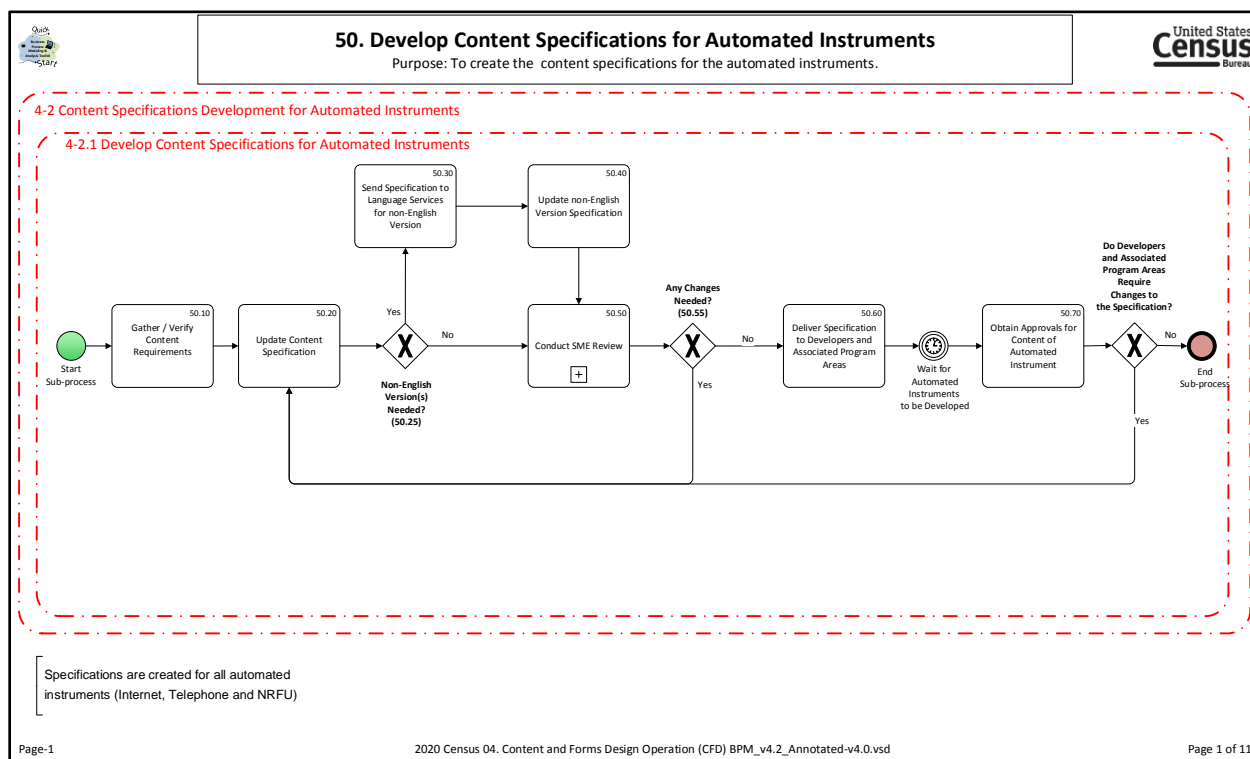


Figure 7: Develop Content Specifications for Automated Instruments

In order to develop content specifications for automated instruments — including ISR, CQA, and field enumeration instruments — CFD gathers and verifies content requirements from stakeholders including CSM, DCCO, DCMD, DSSD, FLD, GEO, POP, and SEHSD. Once requirements are gathered, CFD updates the content specifications for the instruments.

If a non-English version is needed, CFD sends the English content to LNG, and then updates the non-English version of the content specifications once translations are received from the DTO. Following this, SMEs review the content specifications. If changes are required, CFD updates the specifications and sends to LNG as needed.

Once there are no changes, the content specifications are delivered to the ISR and NRFU operations managers who in turn develop any additional specifications needed and work with the developers and conduct usability and user interface testing. If updates to the specifications are required, CFD works with SMEs on updating the specifications sent to LNG, as needed. If approval is obtained, CFD continues to the next subprocess.

3.3 Paper Questionnaire Design and Development [CFD 4-3]

Figure 8 shows the BPM for the Paper Questionnaire Design and Development [CFD 4-3] activity area (area within the shaded gray rounded rectangle) and its constituent activities within the overall context of the CFD Operation.

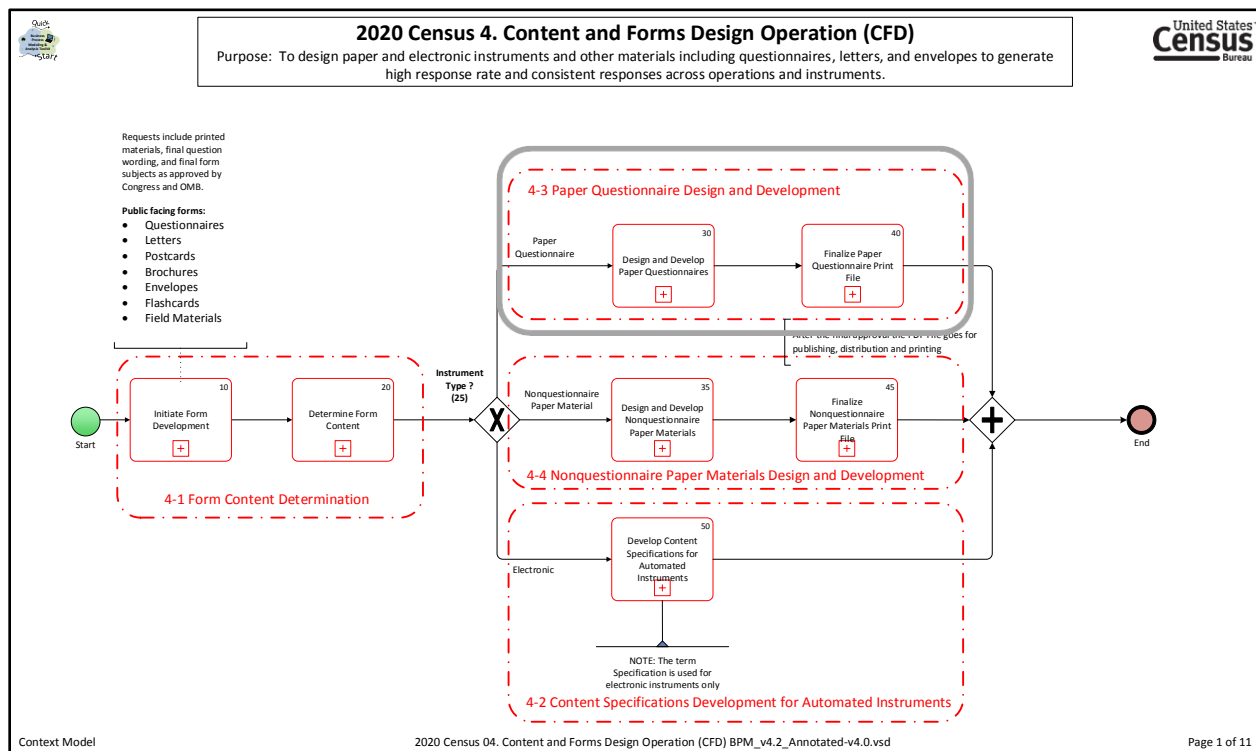


Figure 8: Paper Questionnaire Design and Development [CFD 4-3] Constituent Activities

The Paper Questionnaire Design and Development activity area is subdivided into the following operational subactivities.

- Paper Questionnaire Design and Development [CFD 4-3]
 - Design and Develop Paper Questionnaires [CFD 4-3.1]
 - Finalize Paper Questionnaire Print File [CFD 4-3.2]

After content has been determined for paper questionnaires, CFD works with internal stakeholders and NPC forms designers to develop paper questionnaires and the associated print files.

Subsequent sections describe the Paper Questionnaire Design and Development operational subactivities in detail.

3.3.1 Design and Develop Paper Questionnaires [CFD 4-3.1]

A detailed view of the constituent activities that make up the “Design and Develop Paper Questionnaires” operational subactivity is given in Figure 9 below.

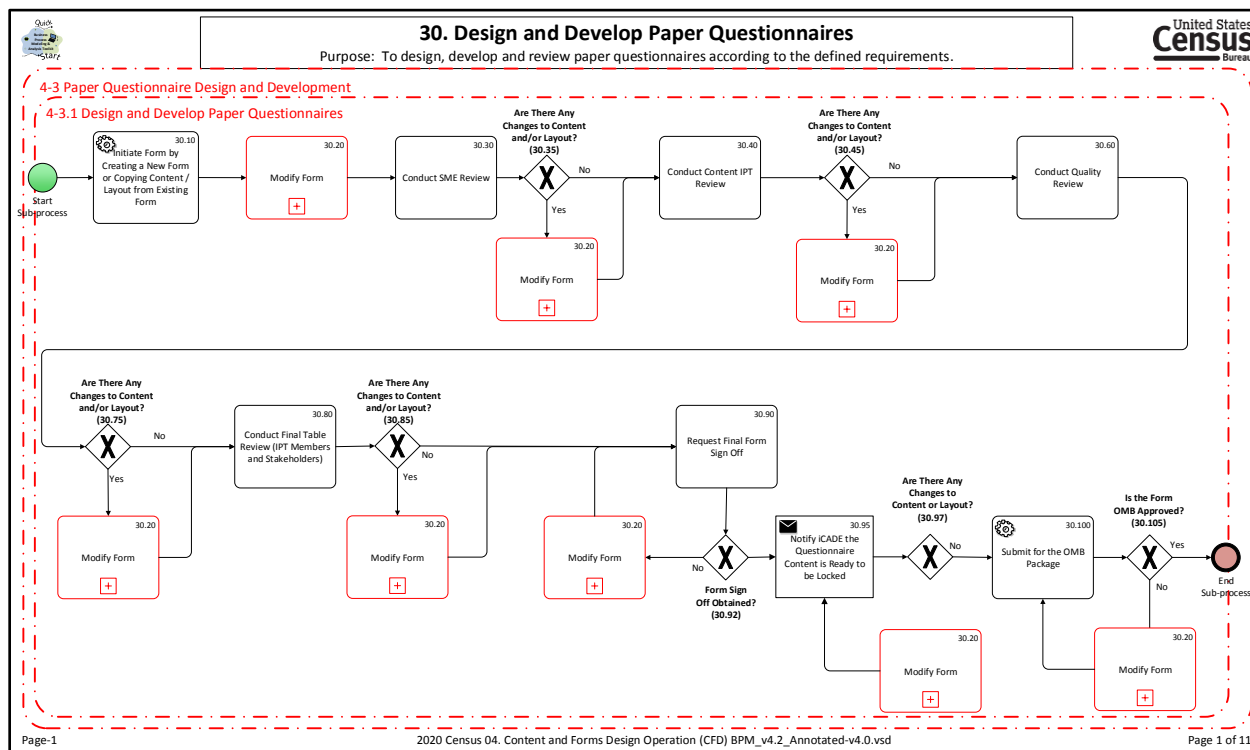


Figure 9: Design and Develop Paper Questionnaires

The “Modify Form” activity is repeated multiple times in “Design and Develop Paper Questionnaires.” The detailed steps for this activity are shown in Figure 10. Note that the Modify Forms activity is repeated in the activity area “Nonquestionnaire Paper Materials Design and Development.”

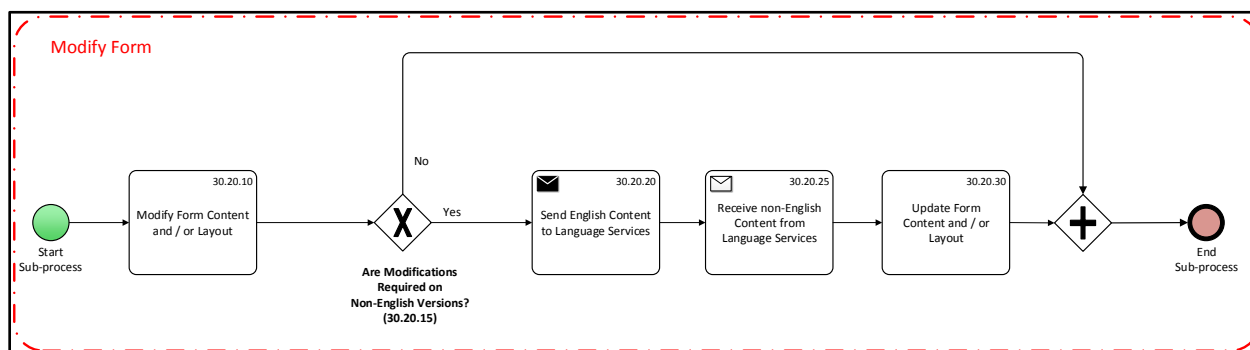


Figure 10: Modify Form

CFD develops an initial draft by creating a new questionnaire or by copying content and layout from an existing questionnaire. CFD then modifies the questionnaire as described below. Throughout the process, CFD works with NPC and iCADE staff to ensure the paper questionnaire is compatible with iCADE requirements for data capture.

Once an initial draft questionnaire has been created, the questionnaire undergoes several levels of reviews and modification, as necessary.

- SMEs conduct the first review to ensure the questionnaire content matches the requirements.
- Content IPT members determine what changes are required and any modifications are made prior to a table review.
- Content IPT members and SMEs participate in a table review, where individuals review the printed version of the modified questionnaire.
- An image of each question, as it appears on the stateside English paper questionnaire, is included in the *Questions Planned for the 2020 Census Program*.
- When no further modifications are needed, CFD requests final sign-off from reviewers. Once the final sign-off is obtained, the questionnaire is included in the OMB package. The OMB package is then submitted to OMB for review.
- If OMB requires modifications, CFD works with SMEs on the updates and resubmit to OMB. Once OMB approval is obtained, the subprocess is completed.

In the Modify Form step, CFD works with SMEs on modifying the questionnaire content and/or layout as necessary. If there are modifications that require updates to the non-English content, CFD sends the content to LNG. Once translated content is received from LNG, CFD updates the content and/or layout as necessary.

3.3.2 Finalize Paper Questionnaire Print File [CFD 4-3.2]

A detailed view of the constituent activities that make up the “Finalize Paper Questionnaire Print File” operational subactivity is given in Figure 11 below.

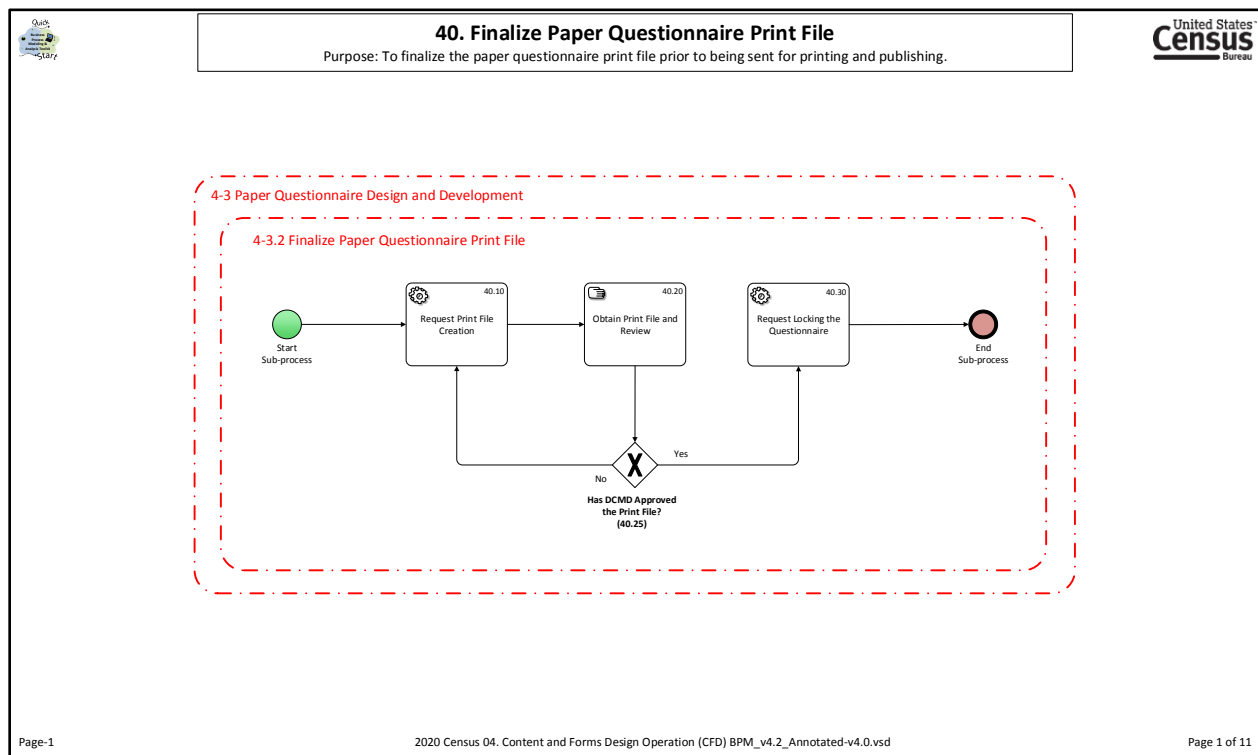
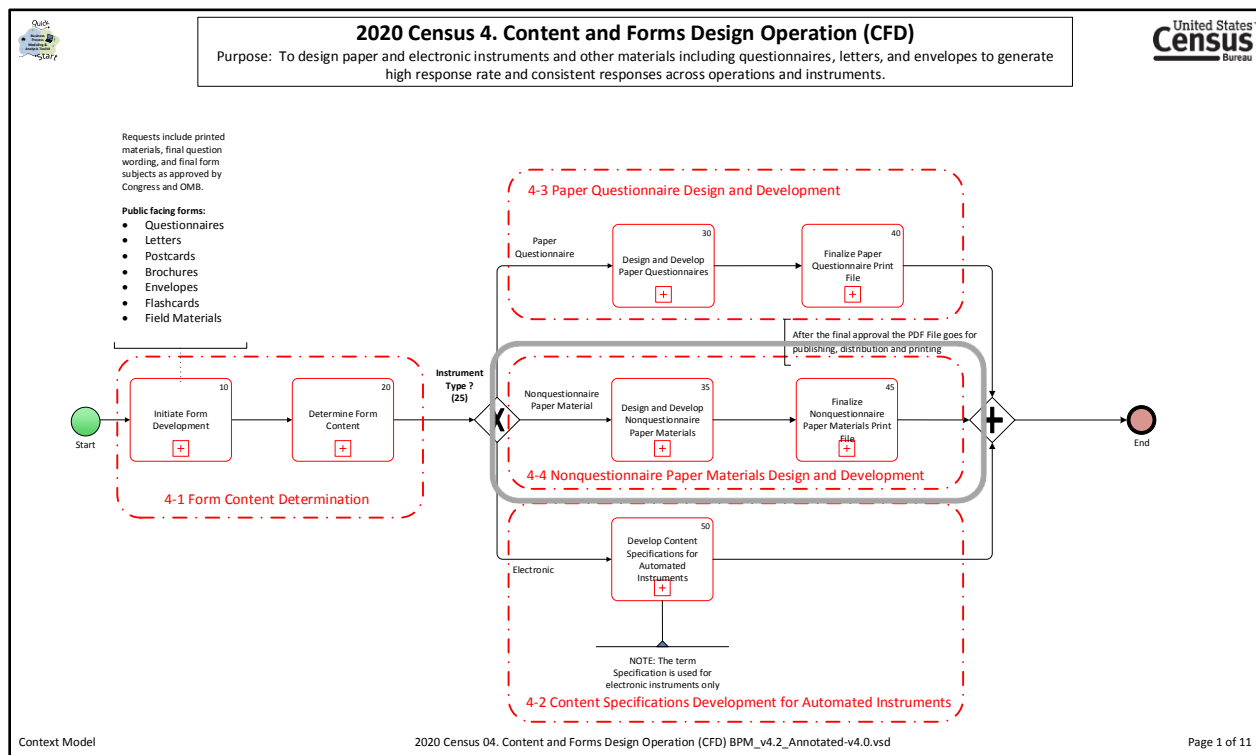


Figure 11 : Finalize Paper Questionnaire Print File

Once the paper questionnaire is finalized, CFD requests the creation of a final print file from NPC. CFD reviews the final print file after it is delivered. If CFD does not approve the print file, CFD requests another file. CFD requests that iCADE lock the questionnaire once the print file is approved.

3.4 Nonquestionnaire Paper Materials Design and Development [CFD 4-4]

Figure 12 shows the BPM for the Nonquestionnaire Paper Materials Design and Development [CFD 4-4] activity area (area within the shaded gray rounded rectangle) and its constituent activities within the overall context of CFD.



**Figure 12: Nonquestionnaire Paper Materials Design and Development [CFD 4-4]
Constituent Activities**

The Nonquestionnaire Paper Materials Design and Development activity area is subdivided into the following operational subactivities.

- Nonquestionnaire Paper Materials Design and Development [CFD 4-4]
 - Design and Develop Nonquestionnaire Paper Materials [CFD 4-4.1]
 - Finalize Nonquestionnaire Paper Materials Print File [CFD 4-4.2]

After content has been determined for nonquestionnaire paper materials, CFD works with internal stakeholders and forms designers at HQ to develop nonquestionnaire paper materials and associated print files.

Subsequent sections describe the Nonquestionnaire Paper Materials Design and Development operational subactivities in detail.

3.4.1 Design and Develop Nonquestionnaire Paper Materials [CFD 4-4.1]

A detailed view of the constituent activities that make up the “Design and Develop Nonquestionnaire Paper Materials” operational subactivity is given in Figure 13 below.

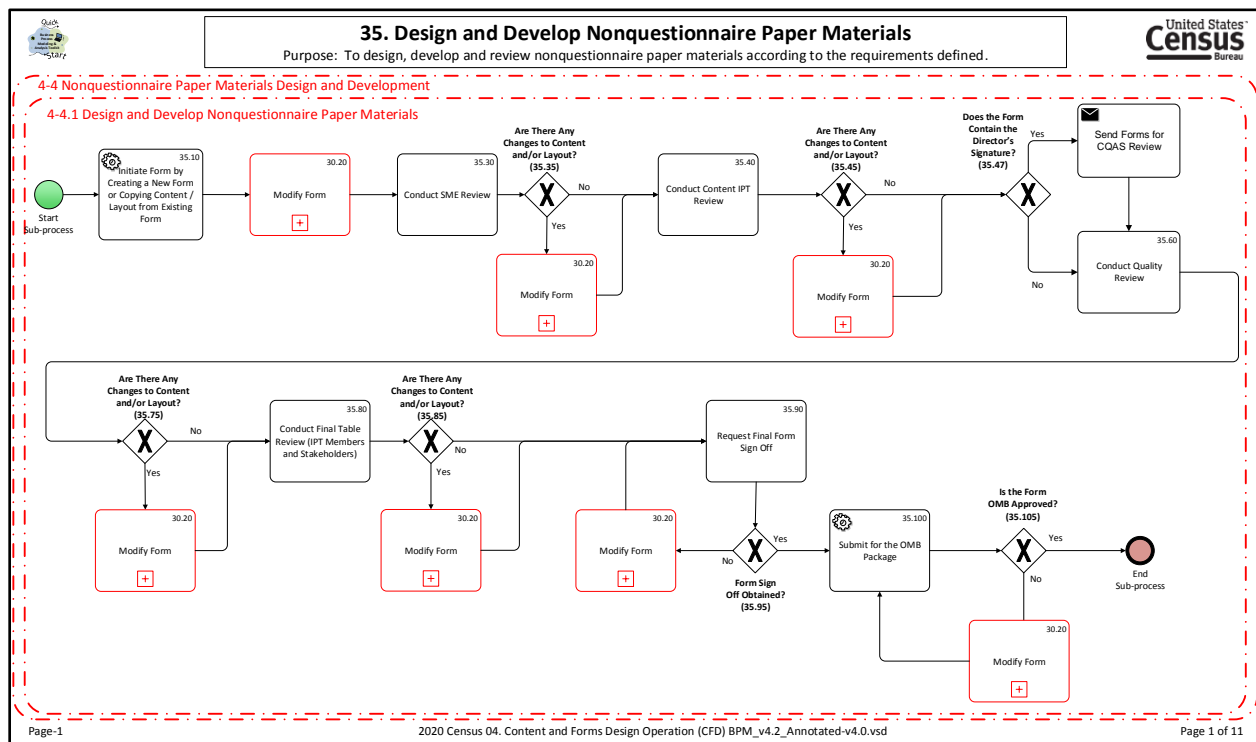


Figure 13: Design and Develop Nonquestionnaire Paper Materials

The Modify Form activity is repeated multiple times in Design and Develop Nonquestionnaire Paper Materials and is the same as used in section 3.3.1 Design and Develop Paper Questionnaires [CFD 4-3.1].

CFD develops an initial draft by creating a new form or by copying content and layout from an existing form. CFD then modifies the form as described below.

Once an initial draft form has been created, the form undergoes several levels of review and modification, as necessary.

- SMEs conduct the first review to ensure the content matches their requirements.
- Content IPT members determine what changes are required and any modifications are made prior to a table review.
- If the form contains the Census Bureau Director's signature, it is sent for CQAS review.
- Content IPT members and SMEs participate in a table review.
- When no further modifications are needed, CFD requests final sign-off from reviewers. Once the final sign-off is obtained, the forms are included in the OMB package. The OMB package is then submitted to OMB for review.
- If OMB requires modifications, the forms are updated again and resubmitted to OMB. Once OMB approval is obtained, the subprocess is completed.

3.4.2 Finalize Nonquestionnaire Paper Materials Print File [CFD 4-4.2]

The Finalize Nonquestionnaire Paper Materials Print File process steps are very similar to the process used in section 3.3.2 Finalize Paper Questionnaire Print File [CFD 4-3.2]. A detailed view of the constituent activities that make up the “Finalize Nonquestionnaire Paper Materials Print File” operational subactivity is given in Figure 14 below.

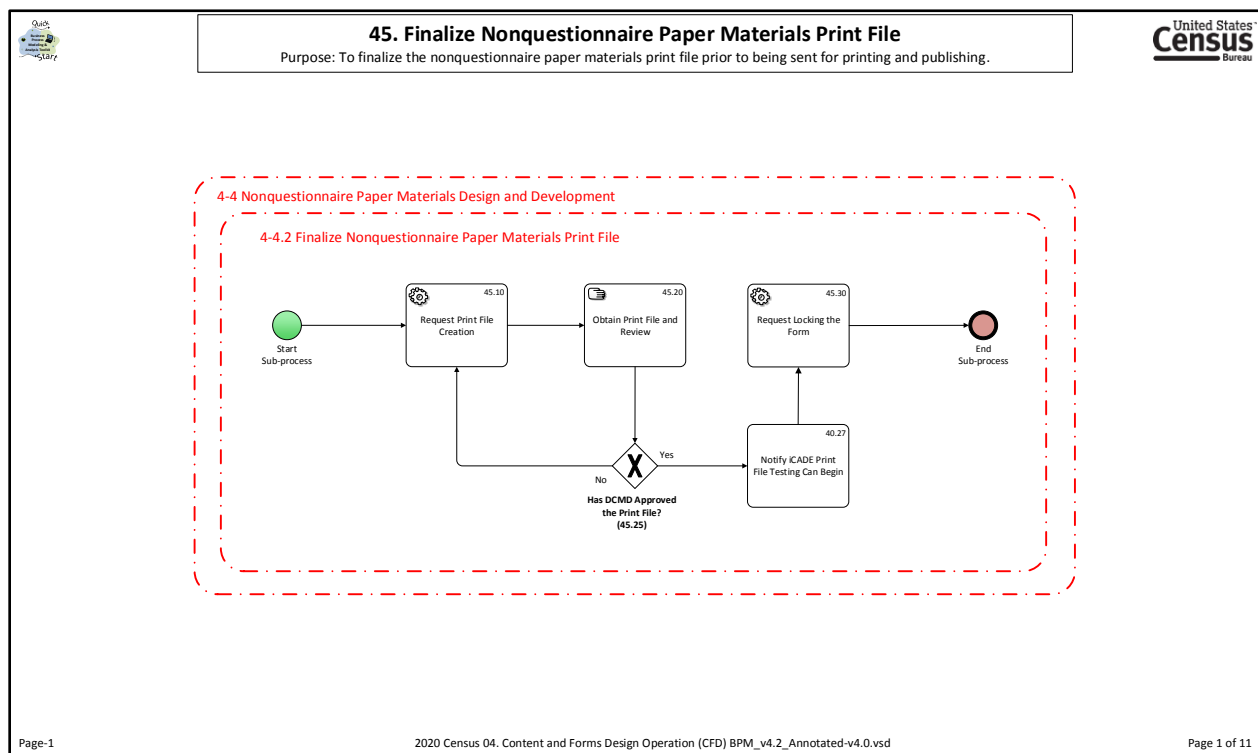


Figure 14 : Finalize Nonquestionnaire Paper Materials Print File

Once the forms are finalized, CFD requests the creation of a final print file from ACSD. CFD reviews the final print file after it is delivered. If CFD does not approve the print file, CFD requests another file.

4. Cost Factors

While the CFD Operation is not a major cost driver for the 2020 Census, the following mechanisms from the IDEF0 Context Diagram represent the resources used to support this operation and comprise part of the 2020 Census cost elements:

Staff

- HQ Staff
- NPC Staff
- Language Research Contractors

Sites

- HQ
- NPC

Systems

- ECaSE
- iCADE

Other

- HQ office IT infrastructure to conduct CFD operational work
- Census Bureau Network connectivity to transmit data between operational systems and operational sites

5. Measures of Success

For the 2020 Census operations, the corresponding Measures of Success will be documented in the operational assessment study plans and final reports. The operational assessment study plan documents the criteria that will be used to define successful completion of the operation. The operational assessment report will provide results on whether the criteria were met.

In general, operational assessments report on planned to actual variances in budget, schedules, and production and training workloads. The corresponding Measures of Success (as documented in the operational assessment study plan) include variances that exceed established thresholds. See *Content Guidelines for the 2020 Census Operational Assessments* for the potential scope of assessment.

Types of success measures include:

- **Process Measures** that indicate how well the process works, typically including measures related to completion dates, rates, and productivity rates
- **Cost Measures** that drive the cost of the operation and comparisons of actual costs to planned budgets. Costs can include workload as well as different types of resource costs
- **Measures of the Quality** of the results of the operation, typically including things such as rework rates, error rates, and coverage rates

See the corresponding operational assessment study plan and report for details on the measures of success.

Appendix A – Acronyms and Terminology

Table 7 lists the acronyms and abbreviations used within this Detailed Operational Plan document.

Table 8 lists a Glossary of Terms used within this Detailed Operational Plan document.

Additional Decennial terminology can be found on the Census Intranet under the [TBD] portal.

Table 7: Acronyms and Abbreviations List

Acronym	Meaning
ACSD	Administrative and Customer Services Division
ACSO	American Community Survey Office
ADEP	Associate Directorate for Economic Programs
BPM	Business Process Model
BPMN	Business Process Model and Notation
CEDCaP	Census Enterprise Data Collection and Processing
CFD	Content and Forms Design Operation
CNMP	Center for New Media and Promotion
CQA	Census Questionnaire Assistance
CQAS	Correspondence Quality Assurance Staff
CSM	Center for Survey Measurement
DCCO	Decennial Census Communications Office
DCMD	Decennial Census Management Division
DITD	Decennial Information Technology Directorate
DLM	Decennial Logistics Management Operation
DOC	Department of Commerce

Acronym	Meaning
DSSD	Decennial Statistical Studies Division
DTO	Decennial Translation Office
ECaSE	Enterprise Censuses and Surveys Enabling Platform
ETL	Enumeration at Transitory Locations
FLD	Field Division
FPD	Forms Printing and Distribution Operation
GQ	Group Quarters
GEO	Geography Division
HQ	Headquarters
IE	Information Exchange
IPC	Integrated Partnership and Communications
IPT	Integrated Projects Team
ISR	Internet Self-Response Operation
LNG	Language Services Operation
NPC	National Processing Center
NRFU	Nonresponse Followup
OMB	Office of Management and Budget
PDC	Paper Data Capture Operation
PM	Program Management Operation
POP	Population Division
SEHSD	Social, Economics and Housing Statistics Division
SME	Subject Matter Expert

Acronym	Meaning
SPC	Security, Privacy, and Confidentiality Operation
UE	Update Enumerate
USPS	U.S. Postal Service

Table 8: Glossary of Terms

Term	Meaning
iCADE	iCADE is an integrated computer-assisted data entry system. It uses optical character recognition technology to electronically capture paper-based survey responses. CFD designs paper questionnaires such that iCADE can be used to capture handwritten responses.

Appendix B – References

Appendix B lists the documents or other resources referenced within this Detailed Operational Plan document.

U.S. Census Bureau (2015), “2020 Census Operational Plan,” Version 1.1, October 6, 2015.

U.S. Census Bureau (2016), “Operational Assessment Content Guidelines for the 2018 End-to-End Census Test and the 2020 Census,” Draft, May 10, 2016.

<http://www.census.gov/content/dam/Census/programs-surveys/decennial/2020-census/pmr100615/2020%20census%20operational%20plan%20final.pdf>

Appendix C – Activity Tree for Content and Forms Design Operation (CFD)

This appendix presents the Activity Tree for CFD. An Activity Tree uses an outline structure to decompose the major operational activities in the operation. Each activity is numbered according to its position in the outline. For example, for the current operation numbered “4,” the first activity would be numbered 4-1. Subactivities under this activity would be numbered sequentially, starting again with the number one. For example, the first subactivity under the first activity would be numbered 4-1.1 the second subactivity as 4-1.2. The second activity would be numbered 4-2, and so on.

CFD Activity Tree:

- 4-1 Form Content Determination
 - 4-1.1 Initiate Form Development
 - 4-1.2 Determine Form Content
- 4-2 Content Specifications Development for Automated Instruments
 - 4-2.1 Develop Content Specifications for Automated Instruments
- 4-3 Paper Questionnaire Design and Development
 - 4-3.1 Design and Develop Paper Questionnaires
 - 4-3.2 Finalize Paper Questionnaire Print File
- 4-4 Nonquestionnaire Paper Materials Design and Development
 - 4-4.1 Design and Develop Nonquestionnaire Paper Materials
 - 4-4.2 Finalize Nonquestionnaire Paper Materials Print File

Appendix D – Business Process Models

This appendix includes all of the Annotated 2020 Census CFD Business Process Models (BPMs) for the CFD Operation. The first sheet describes how to read the notation. Please refer to the [TBD] documents for additional information on the CFD operational process flows.

CFD Annotated BPM Diagram Set

*PDF Attachment: 2020 Census 04. Content and Forms Design Operation (CFD)
BPM_v4.2_Annotated-v4.0.pdf*



2020 Census 04.
Content and Forms D